

THAT WHICH IS CLAIMED:

1. A media supply apparatus for maintaining a transfer ribbon comprising:
  - a spool;
  - a transfer ribbon defining first and second distal ends and being at least partially wound on the spool; and
  - a wireless device disposed on said transfer ribbon, said wireless device having a memory configured to store data and an antenna configured to at least transmit the data stored in the memory to a remote location.
2. An apparatus according to Claim 1 wherein said transfer ribbon is wound on the spool such that the first end is disposed radially inward of a plurality of wound layers of said transfer ribbon and the second end is disposed radially outward of the plurality of wound layers of said transfer ribbon, said wireless device being disposed on said transfer ribbon proximate to the first end such that said wireless device is disposed between the spool and the plurality of wound layers of said transfer ribbon.
3. An apparatus according to Claim 1 wherein said transfer ribbon is wound on the spool such that the first end is disposed radially inward of a plurality of wound layers of said transfer ribbon and the second end is disposed radially outward of the plurality of wound layers of said transfer ribbon, said wireless device being disposed on said transfer ribbon proximate to the second end such that the plurality of wound layers of said transfer ribbon are disposed between the spool and said wireless device.
4. An apparatus according to Claim 1 wherein said transfer ribbon is a dye carrier with at least one thermal transfer dye disposed thereon.
- 25 5. An apparatus according to Claim 1 wherein said wireless device is programmed with data corresponding to a characteristic of said transfer ribbon.

6. An apparatus according to Claim 1 further comprising a housing defining an interior space, the spool being disposed in the interior space of the housing and said wireless device being configured to receive a wireless signal transmitted through said housing.

5 7. An apparatus according to Claim 1, wherein said wireless device is selected from the group consisting of RFID, optical, capacitive sense element, and magnetic sense element.

8. An apparatus for supplying a transfer ribbon, the apparatus comprising:  
10 a media of a transfer ribbon, said media defining first and second distal ends;  
and

a first wireless device disposed on said media, said wireless device having a memory configured to store data and an antenna configured to receive a radio frequency signal for programming the memory.

9. An apparatus according to Claim 8 further comprising a spool, wherein  
15 said media is at least partially wound on the spool.

10. An apparatus according to Claim 9 wherein an outer surface of said spool defines a recess for at least partially receiving the wireless device.

11. An apparatus according to Claim 9 wherein an outer surface of said spool defines an annular groove for at least partially receiving the wireless device.

20 12. An apparatus according to Claim 9 wherein said spool defines a bore extending at least partially therethrough and an aperture extending from an outer surface of said spool to the bore, said wireless device being configured on said spool such that said wireless device can communicate through the aperture

25 13. An apparatus according to Claim 9 wherein a portion of the spool is configured to be deformed such that said spool at least partially receives said wireless device.

14. An apparatus according to Claim 9 further comprising a housing defining an interior space, said spool being disposed in the interior space of said housing and said wireless device being configured to receive a wireless signal transmitted through said housing.

5 15. An apparatus according to Claim 9 further comprising a second wireless device mounted to said spool and having a memory configured to store data and an antenna configured to receive a radio frequency signal for programming the memory of said second wireless device.

10 16. An apparatus according to Claim 8 wherein said media is disposed in a wound configuration such that the first end is disposed radially inward of a plurality of wound layers of said media and the second end is disposed radially outward of the plurality of wound layers of said media, said wireless device being disposed on said media proximate to the first end.

15 17. An apparatus according to Claim 8 wherein said media is disposed in a wound configuration such that the first end is disposed radially inward of a plurality of wound layers of said media and the second end is disposed radially outward of the plurality of wound layers of said media, said wireless device being disposed on said media proximate to the second end.

20 18. An apparatus according to Claim 8 further comprising a structure and first and second spools rotatably mounted to said structure, said media being at least partially wound on said first spool and configured to be transferred therefrom to said second spool.

19. An apparatus according to Claim 8 wherein said wireless device is programmed with data corresponding to a characteristic of said media.

25 20. An apparatus according to Claim 8 further comprising an overlay adhered to said media with said wireless device disposed between said overlay and said media, wherein said overlay is a label with indicia thereon.

21. An apparatus according to Claim 8, wherein said media includes multiple plies and said wireless device is located between two of the plies of said media.

5 22. An apparatus according to Claim 8 wherein said wireless device is a radio frequency identification device configured to receive data via a radio frequency signal.

23. An apparatus according to Claim 8, wherein said wireless device is selected from the group consisting of RFID, optical, capacitive sense element, and magnetic sense element.

10 24. An apparatus according to Claim 8 further comprising a second wireless device, said wireless device having a memory configured to store data and an antenna configured to receive a radio frequency signal for programming the memory.

15 25. An apparatus according to Claim 24 wherein said first and second wireless devices are configured to receive radio frequency signals from transceivers at different locations.

26. An apparatus according to Claim 24 wherein said first and second wireless devices are configured to store different data.

27. For use in a thermal transfer printer, a thermal transfer ribbon having a radio frequency identification device attached thereto. 

20 28. For use in a thermal transfer printer, a thermal transfer ribbon assembly including a rotatable hollow core and a roll of thermal transfer ribbon wound on the hollow core, the ribbon having attached thereto a radio frequency identification device. 

25 29. The combination comprising:   
a thermal transfer ribbon having a radio frequency device attached thereto; and  
a transceiver configured to communicate with the radio frequency identification device.

30. The combination comprising:

a thermal transfer ribbon assembly including a rotatable hollow roll and a roll of thermal transfer ribbon wound on the hollow core, the ribbon having attached thereto a radio frequency identification device; and

5 a transceiver configured to communicate with the radio frequency identification device and including an antenna positioned within the hollow core of the assembly in close proximity to the radio frequency identification device.

31. A media supply apparatus comprising:

a spool;

10 a media defining first and second distal ends and being at least partially wound on the spool; and

a wireless device disposed on said media, said wireless device having a memory configured to store data and an antenna configured to at least transmit the data stored in the memory to a remote location,

15 wherein said spool defines a recess for at least partially receiving said wireless device therein.

32. A media supply apparatus according to Claim 31 wherein an outer surface of said spool defines an annular groove for at least partially receiving the wireless device.

20 33. A media supply apparatus according to Claim 31 wherein said spool defines a bore extending at least partially therethrough and an aperture extending from an outer surface of said spool to the bore, said wireless device being configured on said spool such that said wireless device can communicate through the aperture

25 34. A media supply apparatus according to Claim 31 wherein a portion of said spool is configured to be deformed such that said spool at least partially receives said wireless device.

30 35. A media supply apparatus according to Claim 31 further comprising a housing defining an interior space, said spool being disposed in the interior space of said housing and said wireless device being configured to receive a wireless signal transmitted through said housing.

36. A media supply apparatus according to Claim 31 wherein said media is wound on said spool such that the first end is disposed radially inward of a plurality of wound layers of said media and the second end is disposed radially outward of the plurality of wound layers of said media, said wireless device being disposed on said media proximate to the first end such that said wireless device is disposed between said spool and the plurality of wound layers of said media.

5 37. A media supply apparatus according to Claim 31 wherein said media is wound on said spool such that the first end is disposed radially inward of a plurality of wound layers of said media and the second end is disposed radially outward of the plurality of wound layers of said media, said wireless device being disposed on said media proximate to the second end such that the plurality of wound layers of said media are disposed between said spool and said wireless device.

10 38. A media supply apparatus according to Claim 31 wherein said media is selected from the group comprising paper, ribbon, label, laminate film, and wire.

15 39. A media supply apparatus according to Claim 31 wherein said wireless device is a radio frequency identification device configured to receive data via a radio frequency signal.

20 40. A media supply apparatus according to Claim 31 wherein said wireless device is selected from the group consisting of RFID, optical, capacitive sense element, and magnetic sense element.

41. A method of manufacturing a supply apparatus, the method comprising:

winding media of a transfer ribbon onto a spool, said media defining first and second distal ends;  
25 disposing a wireless device on the media;  
programming a memory of the wireless device with data; and  
retrieving the data from the memory of the wireless device.

42. A method according to Claim 41 wherein said winding step comprises winding the media on the spool such that a first end of the media is disposed radially inward of a plurality of wound layers of the media and a second end of the media is disposed radially outward of the plurality of wound layers of the media, and said 5 disposing step comprises disposing the wireless device on the media proximate to the first end such that the wireless device is disposed between the spool and the plurality of wound layers of the media.

43. A method according to Claim 41 wherein said winding step comprises winding the media on the spool such that a first end of the media is disposed radially inward of a plurality of wound layers of the media and a second end of the media is disposed radially outward of the plurality of wound layers of the media, and said 10 disposing step comprises disposing the identification device on the media proximate to the second end such that the plurality of wound layers of the media are disposed between the spool and the identification device.

15 44. A method according to Claim 41 further comprising providing a spool having a recess defined therein, wherein said winding step comprises at least partially disposing the wireless device in the recess of the spool.

20 45. A method according to Claim 41 further comprising providing a spool having a deformable portion, wherein said winding step comprises placing the wireless device in the deforming portion of the spool such that the wireless device is at least partially received by the spool.

25 46. A method according to Claim 41 further comprising:  
disposing a wireless device on the spool, such that a wireless device is located by on the media and on the spool;  
programming a memory of the wireless device on the spool; and  
retrieving the data from the memory of the wireless device on the spool.

47. A method according to Claim 46 wherein at least one of said programming and retrieving steps comprises communicating with a select one of the wireless devices located on the media and the spool.

48. A method according to Claim 46 wherein said first and second programming steps comprise storing different data in the wireless devices.

49. A method of manufacturing a supply apparatus, the method comprising:

5 winding a media of a transfer ribbon about itself, said media defining first and second distal ends;

disposing a wireless device on the media;

programming a memory of the identification device with data; and retrieving the data from the memory of the identification device.

10 50. A method according to Claim 49 wherein said winding step comprises winding the media about itself such that a first end of the media is disposed radially inward of a plurality of wound layers of the media and a second end of the media is disposed radially outward of the plurality of wound layers of the media, and said disposing step comprises disposing the wireless device on the media proximate to the 15 first end such that the wireless device is disposed between the spool and the plurality of wound layers of the media.

20 51. A method according to Claim 49 wherein said winding step comprises winding the media about itself such that a first end of the media is disposed radially inward of a plurality of wound layers of the media and a second end of the media is disposed radially outward of the plurality of wound layers of the media, and said disposing step comprises disposing the wireless device on the media proximate to the second end such that the plurality of wound layers of the media are disposed between the spool and the wireless device.